UX8800
DIGITAL SIGNAL PROCESSOR / CROSSOVER
OWNER'S MANUAL

EAW
EASTERN ACOUSTIC WORKS

1 IMPORTANT SAFETY INSTRUCTIONS - READ THIS FIRST

Read and heed all warnings and safety instructions in this Manual before using the product. Failure to follow all precautions can result in equipment damage, personal injury, or death.

1.1 Important Safety Instructions for Electronic Products

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. The power plug at the wall must remain accessible to be able to disconnect power from the apparatus.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/accessories specified by the manufacturer.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
16. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquid, such as vases, shall be placed on the apparatus.
17. This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding prong).
18. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION: Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant las limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

19. If the loudspeaker is exposed to changes in temperature and humidity, internal condensation may develop. If powered up with such condensation, electronic failure could result. When exposed to environmental changes, allow the loudspeaker at least 30 minutes to acclimate to a new temperature before connecting to the ac mains and operating.
20. EAW loudspeakers can produce sound levels capable of causing permanent hearing damage from prolonged exposure. The higher the sound level, the less exposure needed to cause such damage. Avoid prolonged exposure to the high sound levels from the loudspeaker.

DANGER: There is danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type. This applies to any loudspeakers with a battery.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DO NOT EXPOSE THE APPARATUS TO DRIPPING OR SPLASHING AND DO NOT PLACE OBJECTS FILLED WITH LIQUIDS, SUCH AS DRINKS, ON THE APPARATUS.

1 CONSIGNES DE SÉCURITÉ - À LIRE EN PREMIER

Lisez et respectez toutes les consignes de sécurité de ce manuel avat d'utiliser le produit. Le non-respect de ces consignes de sécurité peut entraîner des dommages matériels ou des accidents aux personnes qui peuvent être fatals.

1.1 Consignes de Sécurité Importantes Relatives aux Produits Électronique

Le symbole del'éclair dans le triangle équilatéral prévient l'utilisateur de la présence d'une "tension électrique dangereuse" dans le produit constituant un risque d'électrocution.

Le point d'exclamation dans le triangle équilatéral prévient l'utilisateur de la résence d'instructions importantes relatives à l'utilisation et à la maintenance du produit dans le manuel fourni avec le produit.

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Respectez toutes les mises en garde.
4. Suivez toutes les intructions.
5. Ne pas utiliser cet appareil près d'une source liquide.
6. Nettoyer uniquement avec un tissu sec.
7. Ne pas obstruer les ouïes de ventilation. Installer selon les instructions du fabriquant.
8. Ne pas installer près d'une source de chaleur cmme des radiateurs, convecteurs, poêles, ou près de tout appareil (ce qui comprend les amplificateurs de puissance) produisant de la chaleur.
9. Ne pas modifier la sécurité offerte par les fiches secteur polarisées ou avec mise à la terre. Les fiches polaisées sont équipées de deux lames, dont une plus large que l'autre. Les fiches avec mise à la terre disposent d'un troisième plot. La mise à la terre garantit la sécurité des utilisateurs. Si la fiche fournie ne correspond pas au format de vos prises sectur, consultez un électricien qui pourra les remplacer.
10. La fiche secteur dans la prise murale doit rester accessible pour permettre la déconnexion de l'appareil du secteur.
11. Protéger le cordon secteur de toute dégradation de sorte que les personnes e puissent pas marcher dessus. Veiller à ne pas pincer le cordon secteur, de sa sortie de l'appareil, jusqu'à la connexion dans la prise murale ou autre.
12. Utiliser uniquement les fixations/accessoires spécifiés par le fabriquant.
13. Utiliser uniquemen le chariot, pied, tripode, fixation, ou la table spécifiés par le fabriquant, ou vendus avec l'appareil. Lors de l'utilisation d'un chariot, vérifier la stabilité de l'ensemble chariot/équipement pour éviter toute chute et tout accident.

14. Déconnecter 'appareil du secteur en cas d'orage ou de périodes d'inutilisation prolongées.
15. Confier toutes les réparations à un personnel qualifié. L'appareil doit être réparé lorsqu'il a été endommagé, lorsque le cordon ou la fiche secteur ont été endommagés, los de l'infiltration d'un liquide ou d'un objet dans l'appareil, lorsque l'appareil a été exposé à la pluie ou à l'humidité, s'il ne fonctionne pas correctement, ou s'il a subi une chute.
16. Cet appareil ne doit être exposé à aucune source de projection lquide. Ne pas placer d'objet contenant un liquide sur l'appareil (verre, vase, etc.).
17. Cet appareil répond aux normes de fabrication de Classe I et doit impérativement être connecté à une ligne secteur avec terre.
18. Cet appareil répond aux normes de lasse A/Classe B numériques du Département Canadien des Communications (lorsque celles-ci sont applicables) sur les émissions radio générées par les équipements.
19. Si l'enceinte est exposée à des variations de température et d'humidité, il se peut qu'un condensation interne se produise. La mise sous tension de l'appareil en présence de cette condensation peut entraîner une panne électrique. Si l'appareil est exposé à de telles variations, attendez au moins 30 minutes avant de relier l'appareil au secteu et de l'utiliser.
20. Les enceintes EAW peuvent produire des niveaux sonores capables de causer des dommages irréversibles à l'audition en présence d'une exposition prolongée. Plus le niveau sonore est élevé, moins la durée d'exposition est longue avantde causer de tels dommages. Évitez toute exposition prolongée aux niveaux sonores élevés.

DANGER: Danger d'explosion en cas de non remplacement correct de la pile. Remplacez uniquement par une pile identique ou équivalente. Ceci s'applique à toutes les eceintes équipées d'une pile.

ATTENTION: POUR RÉDUIRE LES RISQUES D'INCENDIE OU D'ÉLECTROCUTION, NE PAS EXPOSER CET APPAREIL À LA PLUIE OU À L'HUMIDITÉ. NE PAS EXPOSER AUX PROJECTIONS LIQUIDES ET NE PAS PLACER D'OBJET CONTENANT UN LIQUIDE SUR L'APPAREIL (OISSON, VERRE, ETC.).

1 PRECAUZIONI DI SICUREZZA - DA LEGGERE PER PRIMO

Leggere e rispettare le avvertenze e le norme di sicurezza riportate in questo Manuale prima di uilizzare il prodotto. Il mancato rispetto di ogni precauzione può causare danni all'apparecchiatura, nonché infortuni alle persone o la morte.

1.1 Importanti Norme di Sicurezza per L'uso di Elettronico Prodotti

Il simbolo del lampo con la punta a freccia, racchiuso in un triangolo equilatero, avverte l'utente della presenza di un voltaggio pericoloso non isolato all'interno del prodotto, sufficientemente alto a causare il rischio di shock elettrico alle persone.

Il punto esclamativo all'interno di un tiangolo equilatero, avverte l'utente della presenza di importanti istruzioni operative e di mantenimento (assistenza tecnica) nella documentazione che accompagna il prodotto.

1. Leggere queste istruzioni.
2. Conservare queste istruzioni.
3. Prestare atenzione ad ogni avvertenza.
4. Seguire tutte le istruzioni.
5. Non utilizzare l'unità nelle vicinanze di acqua.
6. Pulire unicamente con un panno asciutto.
7. Non ostruire nessuna apertura adibita alla ventilazione. Effettuare l'installazione seguend le istruzioni del costruttore.

8. L'unità dev'essere posizionata in un luogo lontano da fonti di calore come caloriferi, stufe o altre apparecchiature che producono calore (inclusi gli amplificatori).
9. Non annullare la sicurezza garantita dall'utilizz di spine polarizzate o con messa a terra. Le spine polarizzate sono caratterizzate dalla presenza di due lamine, una più grande dell'altra. Le spine con messa a terra sono caratterizzate dalla presenza di due lamine e di un "dente" per la messa a terra. a lamina maggiore e il "dente" per la messa a terra sono contemplate per garantire la tua sicurezza. Nel caso in cui la spina del cavo incluso non si inserisca perfettamente nella presa, si prega di contattare un elettricista per effettuarne la sostituzioe.
10. La presa di corrente alla parete dev'essere sempre facilmente accessibile, per consentire la disconnessione dell'alimentazione dall'apparato.
11. Proteggere il cavo di corrente dall'essere calpestato o tirato, in particolare la presa e il punto in ui il cavo esce dall'unità.
12. Utilizzare unicamente estensioni/accessori specificati dal costruttore.
13. Utilizzare esclusivamente carrelli, supporti, treppiedi, staffe, o altro specificato dal costruttore o venduto insieme all'unità. Usando un carrell, fare attenzione a non rovesciare l'unità durante la movimentazione.
14. Disconnettere l'unità dalla presa di corrente durante forti temporali o lunghi periodi di inutilizzo.
15. Ogni riparazione deve essere effettuata da personale qualificato. L'assisteza è richiesta quando l'unità risulta danneggiata in qualsiasi modo, ad esempio: cavo di corrente o presa danneggiata, del liquido o degli oggetti sono caduti all'interno, l'unità è stata esposta all'umidità o alla pioggia, l'unità non funziona correttamete oppure è caduta.
16. Non esporre questa unità a gocce o schizzi di alcun liquido. Non posizionare sull'unità oggetti contenenti liquido, come vasi o bicchieri.
17. Questa unità è stata progettata in Classe-I e deve essere collegata ad una presa di corrnte con messa a terra (spina con terzo "dente" per la messa a terra).
18. Questa unità non oltrepassa le limitazioni di Classe A/Classe B (dove applicabile) relative alle emissioni di rumore radio generate da apparecchiature digitali, in conformità alle egolamentazioni riguardanti le interferenze radio emesse dal Canadian Department of Communications.
19. Se il diffusore è sottoposto a variazioni di temperatura e all'umidità, si può sviluppare della condensa all'interno. L'attivazione dell'unità in presnza di condensa, può causare problemi al sistema elettrico. In caso di esposizione a cambiamenti climatici, è necessario permettere al diffusore di acclimatarsi alla nuova temperatura per almeno 30 minuti, prima di collegarlo alla presa di corrente e inizare l'utilizzo.
20. I diffusori EAW sono in grado di generare livelli sonori che possono causare danni permanenti all'udito in caso di esposizione prolungata. Maggiore è il livello del segnale audio, minore è il tempo di esposizione necessario a causare ali danni. Quindi, in caso di utilizzo di livelli sonori elevati, evitare un'esposizione prolungata.

PERICOLO: Se la batteria viene sostituita in modo non corretto, c'è il rischio di esplosione. Effettuare la sostituzione utilizzando una batteria dello sesso tipo o equivalente. Questa norma è valida per qualsiasi diffusore dotato di batteria.

ATTENZIONE: PER RIDURRE IL RISCHIO DI INCENDIO O SCOSSA ELETTRICA, NON ESPORRE L'UNITÀ ALLA PIOGGIA O ALL'UMIDITÀ. NON ESPORRE QUESTA UNITÀ A GOCCE O SCHIZZI DI ALUN LIQUIDO, E NON POSIZIONARE SULL'UNITÀ OGGETTI CONTENENTI LIQUIDO, COME VASI O BICCHIERI.

1 PRECAUCIONES DE SEURIDAD - LEA ESTO PRIMERO

Lea y respete todas las instrucciones de seguridad y aviso que aparezcan en este manual antes de comenzar a usar este aparato. El no cumplir con lo indicado en esas precauciones puede dar lugar a daños en el aparato, daños persoales o incluso la muerte.

1.1 Aviso Importante de Seguridad para Electrónico Productos

El símbolo del rayo dentro de un triángulo equilátero quiere advertir al usuario de la presencia de "voltajes peligrosos" no aislados dentro de la carcasa de ese aparato, que pueden ser de magnitud suficiente como para constituir un riesgo de descargas eléctricas a las personas.

El símbolo de exclamación dentro de un triángulo equilátero quiere advertir al usuario de la existencia de instrucciones importante relativas al manejo y mantenimiento (reparaciones) en los documentos que se adjuntan con el aparato.

1. Lea estas instrucciones.
2. Siga todas las indicaciones.
3. Cumpla con todas las precauciones.
4. Observe todas las instrucciones.
5. No utilice est aparato cerca del agua.
6. Limpie esta unidad solo con un trapo seco.
7. No bloquee ninguna de las aberturas de ventilación. Instale el aparato de acuerdo a las instrucciones del fabricante.
8. No instale este aparato cerca de ninguna fuente de calor com radiadores, calentadores, hornos u otros aparatos (incluyendo amplificadores) que produzcan calor.
9. No anule el sistema de seguridad que supone un enchufe polarizado o con toma de tierra. Un enchufe polarizado tiene dos bornes de distinto tamaño; uno cn toma de tierra tiene dos bornes iguales y una lámina para la conexión a tierra. El borne ancho o la lámina se incluyen para su seguridad. Si el enchufe que venga con su unidad no encaja en su salida de corriente, póngase en contacto con un electricista ara que sustituya esa salida obsoleta.
10. El enchufe de salida de corriente debe quedar accesible para que pueda desconectar el cable del aparato en cualquier momento y sin problemas.
11. Evite que el cable de corriente pueda ser pisado o que quede aplstado, especialmente en los conectores, receptáculos y en el punto de unión con el aparato.
12. Utilice solo accesorios/complementos especificados por el fabricante.
13. Utilice este aparato solo con un soporte, bastidor o rack especificado por el fabricate o que se venda con el propio aparato. Cuando utilice un bastidor con ruedas, tenga cuidado al mover la combinación soporte/aparato para evitar que pueda volcar.
14. Desconecte este aparato de la corriente eléctrica durante las tormentas o cuando no lo aya a usar durante un periodo de tiempo largo.
15. Consulte cualquier posible reparación solamente al servicio técnico oficial. Este aparato deberá ser revisado cuando se haya dañado de alguna forma, como en el caso de un daño en el cable de corriente o onector, si se ha derramado algún líquido sobre la unidad, si el aparato ha quedado expuesto a la lluvia o la humedad, si no funciona normalmente o si ha caído al suelo.
16. No permita que este aparato quede expuesto a salpicaduras de líquidos, ni coloqueobjetos que contengan líquidos (como un florero, por ejemplo) encima de este aparato.
17. Este aparato ha sido diseñado con una construcción de clase I y debe ser conectado a una salida de corriente que disponga de una conexión a tierra de protección (la ercera lámina que indicamos antes).
18. Este aparato no sobrepasa los límites de la clase A/clase AB (cualquiera que sea la aplicable) en cuanto a emisión de ruidos de radio de aparatos digitales, de acuerdo a lo que viene estipulado en las leyes sobre inerferencias del departamento canadiense de comunicaciones.

19. Si el altavoz queda expuesto en algún momento a cambios de temperatura o de humedad, puede producirse condensación de agua en su interior. Si enciende la unidad mientras se produce esa condensción, se puede producir una avería eléctrica. Por ese motivo, cuando la unidad quede expuesta a cambios medioambientales, deje un espacio de al menos 30 minutos para que el altavoz se aclimate a la nueva temperatura antes de conectarlo y usarlo.
20. Los ltavoces EAW son capaces de producir niveles de presión sonora capaces de producir daños permanentes en la capacidad auditiva en caso de una exposición prolongada a los mismos. Cuanto mayor sea el nivel de sonido, menor tendrá que ser el grado de exposicin para producir tal tipo de daños. Evite una exposición prolongada a altos niveles de presión sonora de este aparato.

PELIGRO: Existe el riesgo de una explosión si las pilas no son sustituidas de forma correcta. Sustituya las pilas solo por otras igualeso de tipo equivalente. Esto se aplica a cualquier tipo de altavoz que use una pila.

ATENCION: PARA REDUCIR EL RIESGO DE INCENDIOS O DESCARGAS ELÉCTRICAS, NO PERMITA QUE ESTE APARATO QUEDE EXPUESTO A LA LLUVIA O A UN ELEVADO NIVEL DE HUMEDAD. NO PERMITA QE SE DERRAME NINGÚN LÍQUIDO SOBRE ESTE APARATO, Y NO COLOQUE APARATOS QUE CONTENGAN LÍQUIDOS ENCIMA DE LA UNIDAD.

1 SICHERHEITSHINWEISE - ZUERST LESEN

Lesen und beachten Sie alle Warnungen und Sicherheitsanweisungen dieser Bedienungsanleitung vor der Benutzung des Produkts. Nichtbeachtung dieser Hinweise können möglicherweise zu Schäden am Equipment oder zu Verletzungen bzw. zum Tod von Personen führen.

Sollte es Widersprüche oder Überlappungen geben mit anderen Produktanleitungen geben, so treten diese Passagen an die entsprechenden Stelen in dieser Anleitung.

1.1 Wichtige Sicherheitsanweisungen für Elektronische Produkte

Das Blitzsymbol im gleichschenkligen Dreieck ist ein Warnzeichen für das Vorhandensein von nicht isolierter Spannung innerhalbdes Gehäuses. Diese Spannung kann gefährlich hoch sein, so dass die Gefahr eines elektrischen Schlages besteht.

1. Lesen Sie diese Anleitung.
2. Bewahren Sie diese Anleitung auf.
3. Beachten Sie alle Warnhinweise.
4. Befolgen Sie die Anweisungen.
5. Betreiben Sie das Gerät nicht in der Nähe von Wasser.
6. Reinigen Si das Gerät nur mit einem trockenen Lappen.
7. Verdecken Sie keine Lüftungsschlitze. Stellen Sie das Gerät nur nach den Vorgaben des Herstellers.
8. Betreiben Sie das Gerät nicht in der Nähe von Wärmequellen wir Ölradiatoren, Heizungen, Öfen oder anderen Htzequellen (z.B. auch Endstufen).
9. Setzen Sie keine Sicherheitsvorrichtungen wir codierte Stecker oder Schutzleiter außer Kraft. Ein codierter Stecker hat zwei Kontaktstifte, wobei einer breiter ist als der andere Ein Netzstecker mit Schutzleiterkontak hat zwei Kontaktstifte und zusätzlich einen dritten als Schutzleiterkontakt. Der breitere Kontakt bzw. der Schutzleiterkontakt ist für Ihre Sicherheit da. Wenn der Stecker nicht in Ihre Netzsteckdose passt, lassen Sie sich von einem zugelassenen Elektrobtrieb die veraltete Steckdose austauschen.
10. Der Netzstecker an der Wand muss leicht erreichbar sein, um das Gerät vom Stromnetz trennen zu können.

11. Verlegen Sie das Netzkabel nicht im Durchgangsbereich und schützen Sie es vor Knicken, besonders im Breich der Stecker oder im Bereich, wo das Kabel aus dem Gehäuse austritt.
12. Benutzen Sie ausschließlich vom Hersteller empfohlenes Zubehör.
13. Benutzen Sie ausschließlich von Hersteller empfohlene Transportvorrichtungen, Stative, Montagebügel oder Untegestelle. Bei Benutzung einer Transportvorrichtung sollte darauf geachtet werden, dass eine erhöhte Verletzungsgefahr durch Umkippen besteht.
14. Trennen Sie das Gerät während eines Gewitters oder eines Zeitraums längerer Nichtbenutzung vom Stromnetz.
15 Überlassen Sie alle Servicearbeiten qualifizierten Technikern. Ein Service ist erforderlich, wenn das Gerät einen Defekt aufweist, das Netzkabel oder der Netzstecker beschädigt ist, Flüssigkeit in das Gehäuse eingedrungen ist, das Gerät Regen oder Feuchtgkeit ausgesetzt wurde, das Gerät nicht einwandfrei funktioniert oder heruntergefallen ist.
16. Dieses Gerät das weder Tropfen oder Spritzer von Flüssigkeiten ausgesetzt werden noch dürfen mit Flüssigkeit gefüllte Gefäße wie Vasen auf das Gerät gestellt wrden.
17. Dieses Gerät nach den Vorgaben der VDE Richtlinien gefertigt und benötigt daher eine Schutzerdung über das Netzkabel bzw. die Netzsteckdose (mit drittem Schutzleiterkontakt).
18. Dieses Gerät erfüllt die Class A/Class B Richtlinien (je nachdem, elche zutrifft) in Bezug auf die Aussendung von Störstrahlung, die von digitalen Geräten ausgehen, wie sie in den Störstrahlungsrichtlinien der kanadischen Kommunikationsbehörde festgelegt sind.
19. Ist der Lautsprecher starken Temperatur- bzw. Feuchtigketsschwankungen ausgesetzt, kann im Innern Kondensation auftreten. Durch die entstehende Feuchtigkeit können elektronische Schaltungen ggf. nicht einwandfrei arbeiten. Wenn der Lautsprecher solchen Umgebungsbedingungen ausgesetzt ist, sollten mindestens 30Minuten vergehen, bevor die Netzspannung angeschlossen und der Betrieb aufgenommen wird.
20. EAW Lautsprecher können Schalldruckpegel produzieren, die permanente Gehörschäden nach sich ziehen, wenn man sich diesen Pegeln zu lange aussetzt. Je höher der Pgel, desto weniger Zeit wird benötigt, um einen Gehörschaden zu verursachen. Vermeiden daher das Hören hoher Schalldrücke über längere Zeiträume.

VORSICHT: Von einer falsch eingesetzten Batterie geht Gefahr aus. Ersetzen Sie Batterien nur mit dem gleiche oder gleichwertigen Typ. Diese gilt für alle Lautsprecher mit Batterien.

WARNUNG: UM FEUER ODER EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, SETZEN SIE DAS GERÄT WEDER REGEN NOCH FEUCHTIGKEIT AUS. VERMEIDEN SIE, DASS TROPFEN ODER SPRITZER AN DAS GERÄT GELANGN. STELLEN SIE KEINE MIT FLÜSSIGKEITEN GEFÜLLTEN BEHÄLTER WIE Z.B. TRINKGLÄSER AUF DAS GERÄT.

1.2 EC Declaration of Conformity

Eastern Acoustic Works, as the manufacturer, hereby certifies that, in its delivered version,

Product Model: UX8800
Product Description: Audio digital signal processor
complies with the provisions of these directives and standards:

European Council Directive on Low Voltage, 73/23/EEC
European Council Directive on Electromagnetic Compatibility 89/336/EEC and 93/68/EEC
EN 60065:2002 Audio, video, and similar electronic apparatus - safety requirements
EN 55103-1:1997 Electromagnetic compatibility. Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use - Emission
EN 55103-2:1997 Electromagnetic compatibility. Product family standard for audio, video, audio-visual, and entertainment lighting control apparatus for professional use - Immunity

The Technical Report/File is maintained at:

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Authorized Representative:
Kevin Cyrus
Director of Compliance
LOUD Technologies Inc.
Issued: April 2007

1.3 FCC Information to the User

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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2 UNPACKING

2.1 Contents

1	UX8800 Digital Processor
1 set	Internal support packaging
1	IEC Power cable 6 ft / 2 m with Nema 15-3 ac mains plug for 115V / 120 V
1	IEC Power cable 6 ft / 2 m with Schuko type ac mains plug for 220 V / 240 V
1	Ethernet crossover cable 7 ft / 2.1 m
1	4 A, slow-blow replacement fuse (in rear panel fuse drawer)
1	UX8800 Owner's Manual (this document)
1	CD-ROM with EAWPilot control software and a trial version of Smaart v.6
1	Product registration instructions

2.2 Shipping Damage

If you find the processor is damaged after unpacking, save the packing materials for the carrier's inspection, notify the carrier immediately, and file a shipping damage claim. Although EAW will help in any way possible, *it is always the responsibility of the receiving party to file any shipping damage claim*. The carrier will help prepare and file this claim.

2.3 Returning a Processor to EAW

If the processor must be returned, contact EAW for a Return Authorization. Use the original shipping carton and packing materials. If the shipping carton is damaged, contact EAW for a new carton at a nominal charge. EAW will not be responsible for damage caused by inadequate packing.

3 INTRODUCTION

Congratulations on purchasing the innovative UX8800 digital signal processor (DSP) from Eastern Acoustic Works. While designed with the fundamental principles of close-coupled processing used since the first MX Series Processors in the 1980s, the UX8800 uses EAW's latest advances in digital technology to provide optimum signal processing and management of EAW loudspeaker systems.

3.1 UX8800 Description

The UX8800 is a 4-input, 8-output digital signal processor that operates in either of two modes:

System Processor: The UX8800 functions as a user-controlled, digital signal processor for loudspeakers or for other applications requiring similar processing functions.

Loudspeaker Processor: The UX8800 functions to provide sophisticated, EAW-engineered digital processing for specific portable and installed EAW loudspeakers.

In System Processor mode, the UX8800 provides a complete suite of state-of-the art, digital signal processing tools, including 10 EQ filters and signal delay (up to 1200 ms) for each input and output,as well as gain, polarity, limiting, and crossover filters.

In Loudspeaker Processor mode, one can create up to four different EAW loudspeaker processors for specific EAW loudspeaker products or loudspeaker arrays. These are referred to as "Greyboxes." This term comes from certain parameters not being user adjustable ("black-boxed"), certain parameters being user adjustable ("white-boxed," as it were), with the combination of black/white being grey. Greybox settings consist of preset, EAW-engineered processing parameters for the crossovers, equalization, limiting, and other settings as an integral part of that loudspeaker's design and operation. These settings include EAW's digital processing invention called Gunness Focusing™. In addition, preset limiting parameters are designed to maximize sonic performance during active limiting while providing robust driver protection. These preset parameters are locked down to prevent inadvertent or purposeful modifications. However, the user retains control of gain, input EQ, signal delay, and polarity for each Greybox loudspeaker.

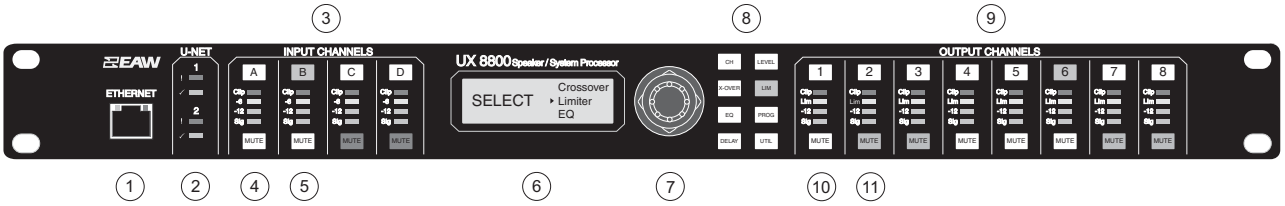
The simplicity of the Loudspeaker Processor mode makes the UX8800 practical for entry level users and fast to operate for professional users. This function provides for a high level of system consistency while retaining all necessary user alignment controls.

3.2 Features and Benefits

- Multiple Mode operation – Allows use as standard system processor or as dedicated loudspeaker processor.
- "Greybox" operation – Complete processing presets for EAW loudspeakers provides ease of setup, consistency, and interoperability between EAW products and systems.
- Comprehensive and intuitive front panel control – Access to operational parameters making computer control unnecessary for simple and quick adjustments.
- U-Net – EAW-designed signal and control networking between U-Net enabled products.
- Digital inputs (U-Net and AES/EBU) – Reduces the total number of A/D & D/A stages.
- EAWPilot software – Comprehensive software control of all hardware parameters.
- Gunness Focusing capable – Implements Gunness Focusing for specific EAW loudspeaker systems using the "Greybox" mode.
- All filter parameters are compatible with EAW's measurement and modeling software - Allows the creation of advanced array processing.
- Advanced Greybox Limiting - Provides more robust driver protection and better sonic performance based on specific EAW driver and loudspeaker performance characteristics.

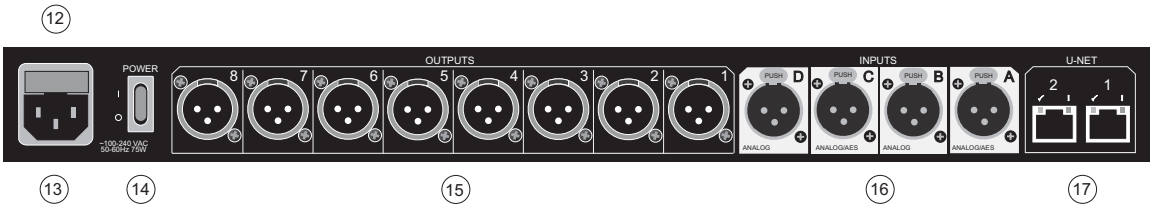
3.3 Networking Capabilities

Standard Ethernet protocol and cabling is used to communicate with and control the processor. Both audio and control signals can be transmitted between additional processors using the built-in U-Net network and standard CAT-5 cabling with RJ-45 connectors. Up to 254 UX8800 processors can be linked using U-Net so that all processors can be controlled by EAWPilot. The wiring configuration for U-Net can be a daisy-chain (serial), a star, or a circular loop.



3.4 Front Panel

1. Ethernet — For connection to a PC or to an Ethernet hub or switch; LEDs indicate connection status.
2. U-Net Indicators — LEDs indicate U-Net status.
3. Input Channels A to D — Selects the input channel for display of or editing its parameters selected by a Function button.
4. Input Channel Meters — Provides input metering after the ADC (analog to digital converter).
5. Input Channel Mutes — Mutes the output signal of the corresponding input channel.
6. LCD Display — Displays parameters for function selected by the function buttons.
7. Encoder Knob — Joystick control for navigating menus and changing parameter settings.
8. Function Buttons — Selects the function to be displayed or edited in the LCD display.
9. Output Channels 1 to 8 — Selects the output channel for display of or editing its parameters selected by a Function button.
10. Output Channel Meters — Provides output metering before the DAC (digital to analog converter).
11. Output Channel Mutes — Mutes the signal and U-Net outputs of the corresponding output channel.



3.5 Rear Panel

12. IEC Receptacle — ac mains input, 100 V to 240 V, 50 Hz to 60 Hz.
13. ac mains fuse — 4 A, slow-blow (main and spare in IEC Receptacle drawer).
14. Power — ac mains on and off.
15. Outputs 1 to 8 — XLR connectors for audio outputs (analog).
16. Inputs A to D — XLR connectors for audio inputs (analog for A to D or AES/EBU for A & C only).
17. U-Net 1 and 2 — Network ports for audio input, audio output, and control connections to additional UX8800s and other U-Net enabled products.

4 UX8800 INSTALLATION

4.1 Physical Installation

CAUTION: The UX8800's operating temperature range is 32 F to 104 F degrees / 0 C to 40 C degrees. The UX8800 may not function properly in temperatures below this range and may be damaged in temperatures above this range.

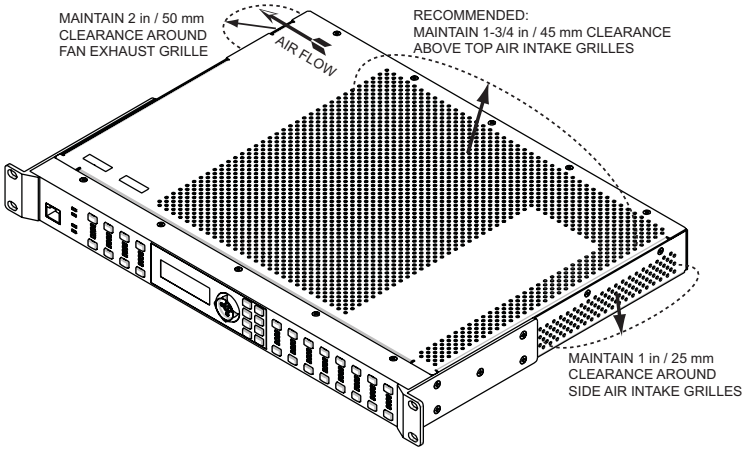
4.1.1 MOUNTING

The UX8800 is designed to mount in a standard, 19 in equipment rack occupying one EIA rack space (1.75 in). When rack mounting, use screws with mating plastic washers to help protect the finish of the UX8800. The UX8800 weighs approximately 10 lb / 4.5 kg.

4.1.2 VENTILATION

An integral fan is used to properly ventilate the UX8800. The fan is located to the rear of the left side of the chassis. The air intake grilles are located on the right side and on top of the chassis. Maintain clearances around the left and right sides of the chassis as shown in the drawing.

It is recommended to leave one empty rack space above the UX8800 to provide 1.75 in / 45 mm clearance above the top air intake holes for additional ventilation.



VENTILATION CLEARANCES

4.2 AC Mains Connections

4.2.1 AC MAINS VOLTAGE

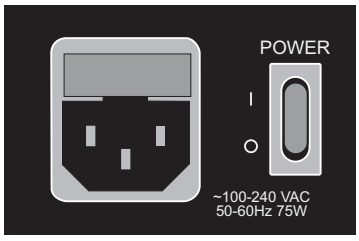
The UX8800 has a universal, auto-ranging power supply that operates from 100 V to 240 V, 50 Hz to 60 Hz. The UX8800 is compatible with these nominal ac mains:

100 V, 110 V, 115 V, 120 V, 127 V, 220 V, 230 V, and 240 V at 50 Hz to 60 Hz.

CAUTION: To maintain compliance ratings, keep the ac mains voltage between 100 V to 240 V.

4.2.2 IEC POWER CORD RECEPTACLE

An IEC-320 ac mains inlet on the rear panel accepts the detachable power cords supplied with the unit. Use the power cord appropriate for these nominal ac mains supply voltages.



120 V ac mains: use the power cord with the NEMA 5-15 plug, EAW part # 640-01-00
220 V ac mains: use the power cord with the Schuko plug, EAW part # 640-02-02

CAUTION: It is the user's responsibility to provide a proper ac mains plug for any ac mains outlet configuration that differs from those supplied with the product.

4.2.3 GROUNDING

The chassis of this product is grounded through the grounding conductor of the power cord. To avoid electric shock, plug the power cord into a properly wired and grounded receptacle before making any connections to or operating the product.

DANGER: This equipment must be operated with the power cord grounding conductor connected to a properly grounded ac outlet. Do not disconnect, "lift," or otherwise remove this ground connection. Without this connection, accessible parts, including knobs and controls that may appear to be insulated, can render an electric shock that can cause injury or death to operating personnel.

4.3 Audio Connections

4.3.1 SIGNAL CABLE

Use a good quality, 2-conductor shielded cable for all audio input and output connections.

4.3.2 INPUT CONNECTIONS

The four, female, XLR-type connectors labeled A through D are audio input connectors.

NOTES:

1. Select the signal type, analog or AES/EBU, in the hardware Utilities menu or EAWPilot/UX8800 settings window.
2. XLR connector B is inactive when AES/EBU is selected for XLR connector A & B.
3. XLR connector D is inactive when AES/EBU is selected for XLR connector C & D.

Analog Pin-Out: XLR A to XLR D
Electronically balanced, line level

Pin 1: Shield
Pin 2: + (plus or high)
Pin 3: - (minus or low)

AES/EBU Pin-Out: XLR A and XLR C
Transformer isolated, balanced.

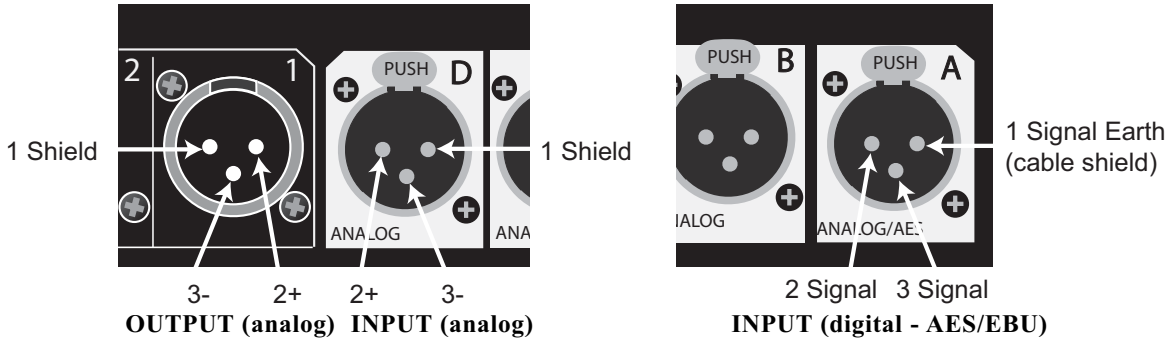
Pin 1: Signal ground (shield)
Pin 2: Channel 1
Pin 3: Channel 2

4.3.3 OUTPUT CONNECTIONS

The eight, male, XLR-type connectors labeled 1 through 8 are the audio output connectors.

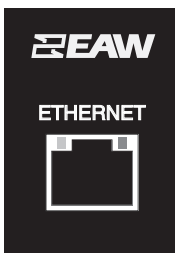
Analog: XLR 1 to XLR 8
Electronically balanced, line level.

Pin 1: shield
Pin 2: + (plus or high)
Pin 3: - (minus or low)



4.4 Network Connections

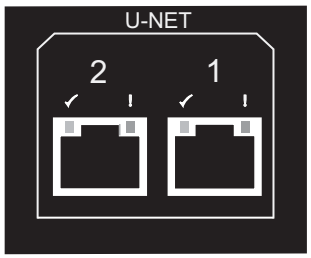
4.4.1 ETHERNET



The UX8800 communicates with a computer through its built-in, front panel, Ethernet port. This port is configured as a standard NIC (network interface card). The UX8800 can be connected to an Ethernet network using hub, switch, router, or wireless connections.

Cable:	8 conductor CAT-5 or better
Mating Connector:	RJ-45 male
Wiring Configuration:	Standard for connection to a network hub, switch, or router Crossover type for direct connection to a computer's NIC

4.4.2 U-NET

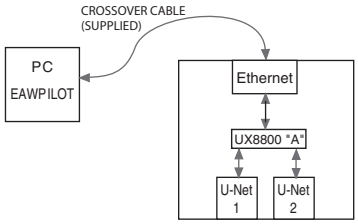


The UX8800 can be networked with additional UX8800s and other U-Net enabled products through its built-in U-Net ports. The rear panel U-Net 1 and U-Net 2 ports are bi-directional communication ports used to communicate audio and/or control signals. Either or both ports may be used to connect to other U-Net enabled products. When U-Net ports are connected, control signals are automatically sent and received. Audio signals must be assigned to be sent and received over U-Net channels using the CH function for the Input Channels and/or Output Channels.

Cable:	8 conductor CAT-5 cable or better
Mating Connector:	RJ-45 male
Wiring Configuration:	Standard or crossover (supplied)

NOTE: The U-Net ports auto-sense the cable wiring configuration.

4.4.3 CONNECTING ONE PROCESSOR TO ONE COMPUTER



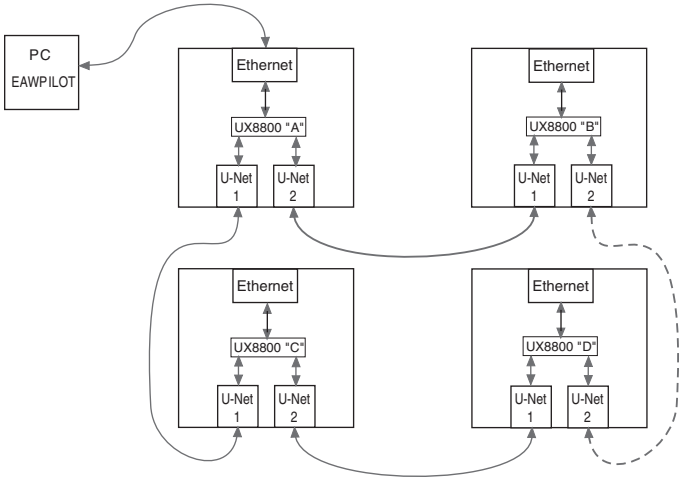
Use the processor's front panel Ethernet port and the supplied Ethernet crossover cable to connect directly to a computer's 10, 10/100, or 100 Mbps Ethernet port. A user-supplied, shorter or longer cable may be substituted. The UX8800's Ethernet port is auto-negotiating, meaning it will automatically exchange information over a link about speed and duplex capabilities and negotiate these to the highest common denominator.

CAUTION: An Ethernet crossover cable is required when connecting two Ethernet ports in the same layer of the OSI model (Open Systems Interconnection Reference Model). A computer's Ethernet port, meaning its NIC (network interface card), and the UX8800 are both OSI layer 3 ports. Therefore, an Ethernet crossover cable is REQUIRED when directly connecting the UX8800 to a computer's NIC. An Ethernet crossover cable reverses transmit and receive pin connections between the connectors at each end of the cable.

4.4.4 CONNECTING ONE COMPUTER TO MULTIPLE PROCESSORS USING U-NET

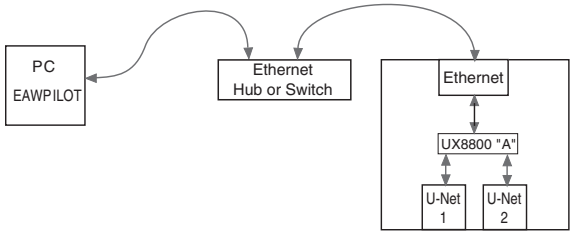
Use the front panel Ethernet port on one processor to connect to a computer as in Section 4.5.1 above. This processor serves as a bridge to the U-Net network. Connect other processors and this processor together using the U-Net ports.

NOTE: Audio signals may also be routed between processors over the same U-Net cables by assigning other U-Net inputs and outputs to the input and output channels.

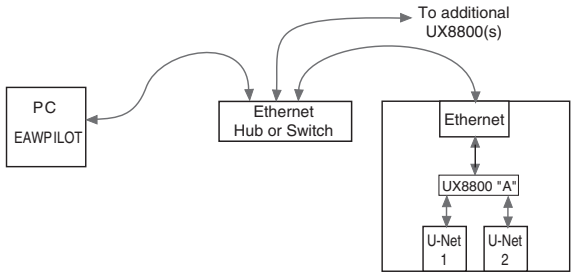


4.4.5 CONNECTING ONE PROCESSOR TO AN ETHERNET NETWORK

Use the front panel Ethernet port and a standard Ethernet cable to connect to a 10, 10/100, or 100 Mbps Ethernet hub or switch on the network.

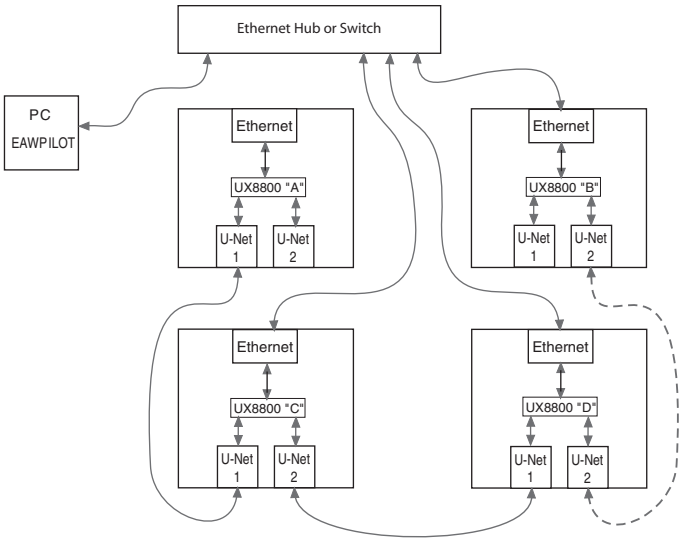


4.4.6 CONNECTING MULTIPLE PROCESSORS TO AN ETHERNET NETWORK



Use the front panel Ethernet port and a standard Ethernet cable to connect each processor to a 10, 10/100, or 100 Mbps Ethernet hub, switch, or router on a network.

4.4.7 CONNECTING MULTIPLE PROCESSORS TO AN ETHERNET AND U-NET NETWORK



Use the front panel Ethernet port and a standard Ethernet cable to connect processors to a 10, 10/100, or 100 Mbps Ethernet hub, switch, or router on the network. Connect additional processors to the Ethernet hub, switch, or router or connect additional processors to the system using the U-Net ports as in Section 4.4.4.

NOTE: Audio signals may also be routed between processors over the same U-Net cables by assigning Input Channel and Output Channel signals to U-Net channels.

4.4.8 SOFTWARE INSTALLATION -- EAWPILOT

EAWPilot requires an IBM compatible PC equipped as follows:

Operating System:	Windows Vista, XP, 2000, NT, ME, or Windows 98
I/O:	Ethernet network interface card (NIC) 10, 10/100, or 100 Mbps

The latest EAWPilot can be downloaded from the EAW web site: www.eaw.com. Go to the “Downloads” page or contact the factory and a copy will be sent to you on a CD-ROM. Once installed and with the computer connected to the UX8800, open EAWPilot by clicking on EAWPilot in the Start/Programs/EAW/EAWPilot.

5 OPERATION - INITIAL SETUP

WARNING: A digital processor provides a wide range of signal processing parameters. The results of using incorrect or improper parameters with a loudspeaker can range from poor sound quality to damage to the loudspeaker. Be sure any settings you make do not cause the capabilities of the drivers in the loudspeaker system to be exceeded.

5.1 Power On /Off

CAUTION: Before powering on the processor, make all connections to the processor and ensure there is no audio signal present at the processor's inputs.

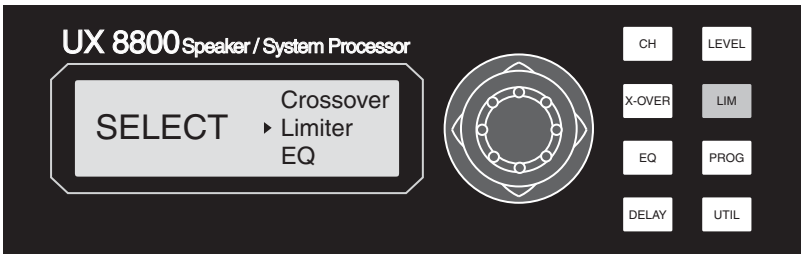
Use the UX8800's rear panel power switch to turn the ac mains supply to the processor on and off.

Always follow prudent audio system practices and procedures for powering on equipment by powering up all equipment in the direction of the signal flow order, meaning from the input to the output of the audio system. Power down the equipment in the reverse of this order.

5.2 Front Panel Controls

5.2.1 DISPLAY

The LCD (liquid crystal display) screen, along with the function buttons and joystick provides the user interface for operating the processor from the front panel. The display can be adjusted for best viewing using the UTIL / LCD Contrast function.



5.2.2 FUNCTION BUTTONS

Use the function buttons to display and edit the operating parameters of the UX8800.

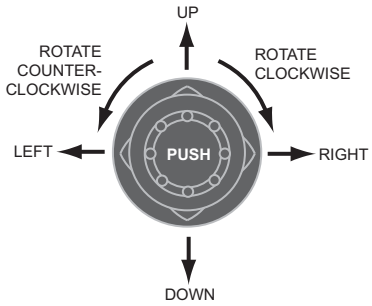
CH	Channel setup
EQ	Channel EQ
DELAY	Channel signal delay
X-OVER	Crossover
LEVEL	Gain and polarity
LIM	Output limiting
PROG	Store and recall user programs
UTIL	Global settings

NOTE: Some function buttons will have no corresponding screen depending on the mode of operation and the channel selected. This will be indicated in the display.

5.2.3 JOYSTICK - DATA ENCODER

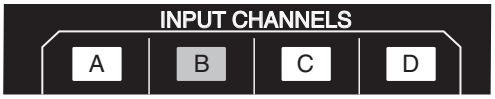
This is the primary control for operating the UX8800 from the front panel. The joystick has seven degrees of motion.

Push	Enters and exits edit mode for the selected menu item.
Up	Moves the display cursor up between menu items.
Down	Moves the display cursor down between menu items.
Left	Moves the display cursor left between menu items.
Right	Moves the display cursor right between menu items.
CW	Scrolls through parameter values for the selected menu item.
CCW	Scrolls through parameter values for the selected menu item.



5.2.4 INPUT CHANNELS: BUTTONS A TO D

Pressing an INPUT channel button will illuminate the button and the display screen will display the selected function's parameters for this input. This action will also illuminate the buttons for any output channels to which this input's audio is routed.



5.2.5 OUTPUT CHANNELS: BUTTONS 1 TO 8

Pressing an OUTPUT button will illuminate the button and the display screen will display the selected function's parameters for this output. This action will not illuminate the input button routing audio to this output.

5.2.6 MUTE BUTTONS

Input Mutes:	Mutes the output signal of the corresponding Input Channel. This does not mute the U-Net output.
Output Mutes:	Mutes signal to both the output XLR and U-Net output.

Mute settings are not saved with and therefore not recalled from Program files saved in the processor's memories. However, the behavior of the mutes may be changed when a program is recalled according to the Program Load setting made in the UTIL menus.

In contrast, mute settings are saved as part of EAWPilot files (*.ept files) and are uploaded to the processor as part of the settings stored in those files.

5.3 UTIL (System Set-Up)

The UTIL function menu items are the global parameters for the processor. Set these parameters first.

5.3.1 DEVICE NAME

Enter a unique name for the processor, up to 16 alphanumeric characters.

5.3.2 MODE

Select the operating mode. When changing processor modes all settings will be reset to the factory default settings for that mode. In order to avoid losing any custom settings, save them using the PROG function before switching modes. During the mode change, the processor reboots itself and mutes all outputs.

System Processor	The processor functions as a standard digital signal processor.
Loudspeaker Processor	The processor functions using factory set "Greybox" settings for particular EAW loudspeaker products.

5.3.3 INPUTS A&B / INPUTS C&D

Select the signal, Analog or AES (=AES/EBU), for Inputs A&B and Inputs C&D. The sample rate for the AES signal can be 44.1 kHz, 48 kHz, 88.2 kHz, or 96 kHz. The sample-rate converter in the UX8800 will convert the input sample rates to 48 kHz sample rate required for its internal processing.

NOTE: Input connector B is disabled when digital is selected for Inputs AB and Input connector D is disabled when digital is selected for Inputs CD.

5.3.4 TEMPERATURE

Enter the ambient temperature. This value is used to calculate the displayed delay distances. These distances depend on the speed of sound, which depends on the temperature of the air through which the sound passes. The temperature is adjustable in one degree increments between 32 F degrees and 104 F degrees or 0 C degrees to 40 C degrees, depending on the Units setting. In Loudspeaker Processor mode, the temperature is also used to calculate the air loss pre-emphasis.

5.3.5 HUMIDITY

This is only functional in Loudspeaker Processor mode. Enter the relative humidity. This value is used to calculate the Air Loss Pre-emphasis filters. The air loss depends on the temperature, humidity, and distance to the listeners. The humidity is adjustable between 10% and 100% in 1% increments. Below 10%, the absorptive properties of air have not been well quantified.

If in System Processor mode, this setting may be ignored.

5.3.6 PROGRAM LOAD OPERATION

Select the mute options for when a saved program is recalled and loaded into active memory.

Current Mutes	The current input and output mute settings are used.
All Mutes	All inputs and outputs are muted.
No Mutes	All inputs and outputs are unmuted.

5.3.7 LCD CONTRAST

Adjust the LCD contrast value over the range of 0 to 100% for the best display for the viewing angle.

IMPORTANT NOTE: If the contrast is so bad that the display cannot be read, adjust the contrast by holding the UTIL button and turning the encoder until the display can be read.

5.3.8 UNIT OF MEASUREMENT

Select the unit of measurement used in display of the delay distance and temperature: metric or U.S.

5.3.9 IP ADDRESS

Configure the IP (Internet Protocol) address for the front panel Ethernet port:

Dynamic	IP address is assigned by a network DHCP (Dynamic Host Configuration Protocol) server.
Static	Manually enter an IP address, normally a “private” IP address. The first three number groups in the IP address must be the same for both the computer and the UX8800. For example: 192.168.0.N, with N being an integer from 1 to 254, unique to each device.

NOTES:

Private IP addresses are non-routable, meaning addresses that do not work over the Internet. Details for configuring IP addresses is beyond the scope of this manual, however, this information is readily available over the Internet.

It may be necessary to change the method EAWPilot uses to query devices and obtain their IP addresses.

5.3.10 FRONT PANEL LOCK

Use this to lock the front panel functions, except the Mute buttons, from being operated. If you forget the password, the processor must be reset. This will reset ALL parameters to the factory default settings, erase all programs stored in Loudspeaker Processor memories, and erase the existing password. See the Troubleshooting Section for details.

Panel Lock	Follow the prompts and enter a Pass Code for locking the front panel. Follow the prompts and enter the previously entered Pass Code to unlock the front panel and allow parameter adjustments and other changes.

5.3.11 ABOUT

Select to view information about the processor:

Version Number:	Displays the version of the firmware installed in the processor.
Device ID:	Displays the unique hardware ID assigned at the factory. EAWPilot uses this device ID to identify and recognize each particular device to which it can connect.

6 OPERATION - SYSTEM PROCESSOR MODE

6.1 Introduction

System Processor mode configures the processor for standard, digital signal processing functions. These functions consist of Input Channel and Output Channel processing that includes equalization filters, signal delay, polarity, gain, crossover filters, limiting, and high/low-pass filters. All parameters are user accessible and user adjustable.

6.2 Select System Processor Mode

1. Select the UTIL function.
2. Scroll down to and select: Mode
3. Select: System Processor. This will reboot the processor and reset all parameters to their default settings for this mode.

6.3 Signal Routing

In order to pass signal, these tasks must be completed as detailed in the sections listed.

1. Select the type of input signal connected to the XLR input connectors (5.3.3).
2. Assign one or two sources (input connector signals) to each input channel (6.4.1).
3. Assign a source (an input channel) to each output channel (6.5.1).

6.4 CH (Input Channels A to D)

Use the CH function to set the parameters for Input Channels A to D by selecting the A to D buttons.

6.4.1 SRC - SOURCE 1 / SOURCE 2

Select either a single source or a sum of two sources. The same source can be selected for multiple Input Channels. The source choices available depend on the configuration of the Input Channels as set in the UTIL menu.

None
Analog A / AES A CH 1
Analog B / AES A CH 2
Analog C / AES B CH 1
Analog D / AES B CH 2
U-Net 1 to 32

6.4.2 CHANNEL NAME

Enter a name for the input channel, up to 16 alphanumeric characters.

6.4.3 U-NET OUT ASSIGN

Assign the summed, unprocessed sources to a U-Net output channel. This is useful for daisy-chaining a single analog or AES source signal to multiple UX8800 units.

6.5 CH (Output Channels 1 to 8)

Use the CH function to set the parameters for Output Channels 1 to 8 by selecting the 1 to 8 buttons.

6.5.1 SOURCE SELECT

Select one of the Input Channels as a source for the Output Channel. The same Input Channel can be the source for multiple Output Channels.

None
Input Channel A
Input Channel B
Input Channel C
Input Channel D

6.5.2 U-NET OUT ASSIGN

Assign the processed output signal to a U-Net output channel: U-Net 1 to 32

6.5.3 CHANNEL NAME

Enter a name for the output channel, up to 16 alphanumeric characters.

6.6 LEVEL

Use the LEVEL function to set Input Channel and Output Channel gain and polarity by selecting the A to D or 1 to 8 buttons.

Level:	Scroll through and select the gain up to +/- 15 dB in 0.1 dB steps.
Polarity:	Select the polarity: + or -.

6.7 X-OVER (Output Channels 1 to 8)

Use the X-OVER function to set crossover filters for providing an acoustic transition between a multi-amplified loudspeaker's subsystems. The crossover filters have the following variable parameters:

HPF / LPF	High Pass Filter / Low Pass Filter
Filt:	Set the selected HPF or LPF to be active or inactive.
Freq:	Scroll through and select the crossover filter frequency from 20 Hz to 20 kHz in 1/24th Octave steps.
Type:	Scroll through and select the crossover type and slope: 6 dB Butterworth, Bessel 12 dB Butterworth, Bessel, Linkwitz-Riley 18 dB Butterworth, Bessel 24 dB Butterworth, Bessel, Linkwitz-Riley 30 dB Butterworth, Bessel 36 dB Butterworth, Bessel, Linkwitz-Riley 42 dB Butterworth, Bessel 48 dB Butterworth, Bessel, Linkwitz-Riley

6.8 LIM (Output Channels 1 to 8)

Use the LIM function to set the compressor / limiter parameters:

Lim:	Sets the Comp/Lim to In (active) or Out (inactive).
Thrsh:	Scroll through and select the limiter threshold from 20 dBu to -10 dBu in 0.1 dB steps.
Ratio:	Scroll through and select the compression ratio in integer increments: 1:1 to 20:1, or Inf:1.
Atk:	Scroll through and select the limiter attack from 40 µs to 1 ms in 10 µs steps, 1 ms to 40 ms in 1 ms steps. The default setting is 1 ms.
Rel:	Scroll through and select the limiter release from 10 ms to 2 s in 10 ms steps.
Knee:	Select the aggressiveness of the onset of limiting between a hard or soft knee.

6.9 EQ

Use the EQ function to set the Input Channel and Output Channel equalization by selecting the A to D or 1 to 8 buttons. Each channel's EQ section has 10 filters. Each EQ section has the following variable parameters. The available parameters depend on the selected Type.

Parametric EQ:	Sets the entire EQ section (filters 1 to 10) to In (active) or Out (inactive).
Type:	Scroll through and select the type for each parametric filter: Bell, 6 dB LoShelf, 12 dB LoShelf, 6 dB HiShelf, 12 dB HiShelf, 6 dB HPF, 12 dB HPF, 6 dB LPF, or 12 dB LPF.
BW:	Scroll through and select the bandwidth for each filter: 0.02 to 10 octaves.
Freq:	Scroll through and select the frequency for each filter: Variable from 20 Hz to 20 kHz in 1/24th octave steps.
Gain:	Scroll through and select the gain for each filter: +/- 15 dB in 0.1 dB steps.
Filt:	Sets the selected filter (1 to 10) to be In (active) or Out (inactive).

6.10 PROG

The UX8800 has memory spaces for 50 user-savable and loadable programs for each operating mode (Loudspeaker Processor and System Processor).

NOTE: The unit will only display programs stored in memory for the current operating mode: System Processor or Loudspeaker Processor.

Load — Scroll through existing programs stored in the processor memories to find and load the desired program. A program contains information for all processing parameters except for the mute settings. Programs can only be loaded for the specific operating mode in use.

NOTE: While mute settings are not saved, the mute preferences set in the On Prgm Load setting in the UTIL menu will be used when loading a program.

Save — Scroll through existing programs stored in the processor's memories and empty memories to find a destination to save the current processing parameters. Name the program to be saved. If a memory with an existing program is chosen, rename the program to be saved. This will replace the existing program saved into that memory.

Delete — Scroll through the existing programs stored in the processor's memories and choose one to delete. You must confirm deletion before the program can be deleted.

6.11 DELAY

Use the DELAY function to set Input Channel and Output Channel signal delay by selecting the A to D or 1 to 8 buttons.

Input delay: Normally used to set an overall delay for a loudspeaker or group of loudspeakers.

Output delay: Normally used to time align the outputs of a loudspeaker's individual subsystems or as an overall delay for a loudspeaker or group of loudspeakers.

Select the signal delay up to approximately 1200 ms in one sample (20.83 µs) steps. The delay is displayed in both milliseconds (2 decimal places) and distance (feet or meters according to the units settings).

7 OPERATION - LOUDSPEAKER PROCESSOR MODE

IMPORTANT NOTE: In this mode only certain functions and parameters are available for user adjustment. These will vary depending on the input configuration and the specific loudspeaker or array selected by the user.

7.1 Introduction

In Loudspeaker Processor mode the user can select from a list of specific EAW loudspeaker models and arrays with factory-determined processor settings. This processing is not user accessible or adjustable. EAW has designed the processing for each product listed and uploads it into specific, read-only memories in the UX8800. As new loudspeaker products are released and older products are provided with Gunness Focusing, these new settings can be uploaded into the UX8800.

The user configures one or more Input Channels by selecting a specific loudspeaker product for each. The user then assigns the required number of outputs for each loudspeaker to that input channel as output "legs."

In Loudspeaker Processor mode the user can also configure one or more inputs for generic signal processing and assign it to one or more unused outputs as needed. This provides the same capabilities for those channels as if they were in System Processor mode.

7.1.1 GREYBOX PROCESSING

When a specific loudspeaker or array is selected, there are three types of signal processing. The first two are the processing for the Output Channels and are not user adjustable. The third type is input channel processing that is user-adjustable.

1. Standard Processing: This consists of standard, digital processing functions, including signal delay for driver time alignment, polarity, gain, crossover filters, and high/low-pass filters. These settings are fixed at the factory.
2. Gunness Focusing: This consists of a precise and highly complex filter specifically designed to correct physical and electro-acoustic anomalies inherent to the design of a loudspeaker and which cannot be corrected using conventional digital signal processing functions. In order to be correctable, each of these anomalies must remain constant with listener direction, signal level, environmental differences, and loudspeaker age. These anomalies are grouped together and treated using a single, though quite complex, Gunness Focusing filter that addresses the entire audible frequency range. These settings are fixed at the factory.
3. Input Processing: This consists of standard digital processing functions, including signal delay for overall delay, gain, polarity, EQ, and high/low-pass filters. These settings are user adjustable and affect all Output Channels (legs) assigned to each input and thus the overall performance of the loudspeaker.

7.1.2 GENERIC PROCESSING

When generic processing is selected for an Input Channel, the Input Channel and Output Channel processing is configured for standard digital processing functions, including signal delay, gain, polarity, EQ, limiting, and high/low-pass filters.

NOTE: When set for generic processing, the Input Channel processing can be adjusted using the UX8800 front panel. However, Output Channel processing can only be adjusted using EAWPilot software. It cannot be adjusted from the UX8800 front panel.

7.2 Select Loudspeaker Processor Mode

1. Select the UTIL function.
2. Scroll down to and select: Mode
3. Select: Loudspeaker Processor. This will reboot the processor and reset all parameters to their default settings for this mode.

7.3 Signal Routing

In order to pass signal, these tasks must be completed, as detailed in the sections listed.

1. Select the type of input signal connected to the XLR input connectors (5.3.3).
2. Assign one or two sources (input connector signals) to each input channel (7.4.1).
3. For each input channel, select a Greybox or Generic Processing (7.4.2).
4. Assign each Greybox or Generic Processing leg to an output channel (7.4.2.5).

7.4 CH (Input Channels A to D)

Use the CH function to set the parameters for Input Channels A to D by selecting the A to D buttons.

7.4.1 SRC - SOURCE 1 / SOURCE 2

Select either a single source or a sum of two sources. The same source can be selected for multiple Input Channels. The source choices available depend on the configuration of the Inputs as set in the UTIL menu.

None
Analog A / AES A CH 1
Analog B / AES A CH 2
Analog C / AES B CH 1
Analog D / AES B CH 2
U-Net 1 to 32

7.4.2 TYPE

Type:	Select the particular loudspeaker model to be used.
G.F. level:	*Focused* means the processing uses Gunness Focusing *Legacy* means the processing does not use Gunness Focusing
rev:	The current revision number for the selected file
Desc:	A description of the file contents.

When the TYPE function is selected, follow this sequence of steps:

1. Scroll through the list of loudspeaker and array products and select the desired Greybox model. Select "Generic Processing" to have that Input Channel and the Output Channel(s) to which it is assigned function in System Processor mode with all input and output parameters fully user adjustable.

   When set for generic processing, the Input Channel processing can be adjusted using the UX8800 front panel. However, Output Channel processing can only be adjusted using EAWPilot software. It cannot be adjusted from the UX8800 front panel.

2. *Reset Input DS*P: Select *Yes* to reset the input settings (EQ, delay, polarity, and/or gain) to their default values or select *No* to retain the current settings. This setting affects the entire loudspeaker or array. The input name and signal routing settings are not affected.
3. *HPF Freq:* If enabled for the selected loudspeaker model, scroll through and select the frequency. The range will depend on the particular loudspeaker model. This setting affects the entire loudspeaker or array. (See Section 7.7 for details.)
4. *LPF Freq:* If enabled for the selected loudspeaker model, scroll through and select the frequency. The range will depend on the particular loudspeaker model. This setting affects the entire loudspeaker or array. (See Section 7.7 for details.)
5. *Out:* Select the output to be used for the loudspeaker's subsystem (referred to herein as "leg").
6. *Amp Gain:* Scroll through and select the Amp Gain for the amplifier connected to that output channel. (See Section 7.5.3 for details.)
7. *Vrms:* Scroll through and select the Max Voltage (maximum rms voltage) for the amplifier connected to that output channel. (See Section 7.5.4 for details).
8. *Listener Distance:* Scroll through and set the Listener Distance for the array or loudspeaker to the closest part of the audience area covered by the portion of the array to which the pre-emphasis is applied.
9. Repeat steps 3 to 7 as applicable for the other selected loudspeaker or array legs or subsystems.

NOTES: The Amp Gain, Max Voltage, and Listener Distance can be adjusted at any time by selecting the CH function and the desired Output Channel then editing these parameters.

The HPF and LPF filters can be adjusted at any time by selecting the X-over function and the desired Input Channel then editing these parameters.

7.4.3 U-NET OUTPUT

Assign the summed, unprocessed sources to a U-Net output channel. This is useful for daisy-chaining an analog or AES source signal to multiple UX8800 units.

7.4.4 NAME

Enter a name for the input channel, up to 16 alphanumeric characters.

7.5 CH (Output Channels 1 to 8)

Use the CH function to set the parameters for Output Channels 1 to 8 by selecting the 1 to 8 buttons.

7.5.1 SRC

Displays the Input Channel source for the selected output channel.

7.5.2 TYPE

Displays the model of the selected Greybox.

IMPORTANT !!

The *Amp's Max Voltage* and *Amp Gain* values you enter are CRITICAL in order for the UX8800 to provide the correct acoustic balance and limiter parameters. These values must match the actual performance of the amplifier connected to each Greybox's output. If these values do not match the performance, the loudspeaker or array may be voiced incorrectly, be over protected, or be under protected.

7.5.3 AMP GAIN

Scroll through and select the Amp Gain for the amplifier connected to that output channel. The range is from 10 dB to 50 dB in 1 dB increments. This value is used by the UX8800 to determine the Output Channel gain and limiter threshold setting.

The amplifier gain must be in dB, being 20 x log (input voltage / output voltage), the voltages being rms. The value you enter MUST account for any gain or attenuation between the UX8800 output and the amplifier input. Normally, the published gain specification for an amplifier is determined with its input level control at maximum. Setting an amplifier's input level controls to less than maximum, as is often the case to achieve good gain structure, changes the amplifier gain. In this case, the measure gain. Do not rely on a level control's attenuation markings.

7.5.4 MAX VOLTAGE

Scroll through and select the Max Voltage (maximum rms voltage) for the amplifier connected to that output channel. This value is used by the UX8800 to determine the limiter threshold setting.

The amplifier maximum voltage must be the rms level at clipping at the nominal impedance of the loudspeaker, being the square root of (maximum watts at nominal Z x nominal Z). Determine this from the amplifier specifications, calculation, or measurement.

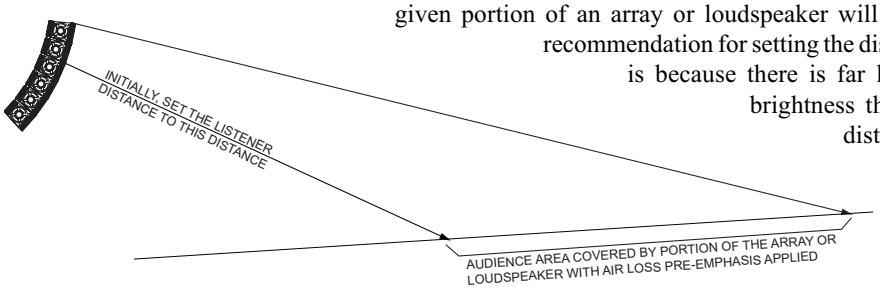
7.5.5 LISTENER DISTANCE AND AIR LOSS PRE-EMPHASIS

IMPORTANT !!

In order for the Air Loss Pre-emphasis to be effective, the ambient temperature and humidity values MUST be manually entered using the UTIL menu on the UX8800's front panel. (See Sections 5.3.4 and 5.3.5.)

If enabled, scroll through and set the Listener Distance (1 m to 256 m) from the array to the closest part of the audience area covered by the portion of the array to which the pre-emphasis is applied.

The Listener Distance is a parameter of the Air Loss Pre-emphasis filter that compensates for high frequency air loss over distance. The parameters of this filter are calculated from the user-entered ambient temperature, relative humidity, and listener distance.



While only a single distance is entered for the Air Loss Pre-Emphasis Filter, the audience covered by a given portion of an array or loudspeaker will vary in distance from the array. The recommendation for setting the distance to the closest listeners in this area is because there is far lower listener tolerance for excessive brightness than a lack of brightness. Thus, if the distance is set for the closest part of the audience area covered by the filtered portion of the array or loudspeaker, then the more distant listener will hear less bright sound. However, if the distance is set for audience further back in this area, then the sound for the closer listeners in this area will be excessively bright and likely annoying. In any case, you can adjust the brightness to taste by adjusting the distance parameter.

NOTE: To bypass **the Air-Loss Pre-emphasis** filter: set the ***Listening Dist*** to 1 m.

7.6 LEVEL (Input Channels A to D)

Use the LEVEL function to set Input Channel gain and polarity by selecting the A to D buttons.

Level:	Scroll through and select the gain up to +/- 15 dB in 0.1 dB steps.
Polarity:	Select the polarity: + or -.

7.7 X-OVER (Input Channels A to D)

7.7.1 HPF FREQ AND LPF FREQ

X-Over HPF (if enabled): scroll through and select the frequency. The range will depend on the particular loudspeaker model. This setting affects the entire loudspeaker.

X-Over LPF (if enabled): scroll through and select the frequency. The range will depend on the particular loudspeaker model. This setting affects the entire loudspeaker.

The X-Over HPF and LPF filters are typically used in either of two ways.

1. Stand-alone Loudspeakers and Arrays:

   For full-range loudspeakers and subwoofers, the LF subsystem has an HPF enabled that is set to protect the loudspeaker from excessive LF signals that are below its operating range. Normally, leave HPF settings at their default values. This is always a 12 dB per octave Butterworth filter.

   For applications such as voice-only, fill usage, and similar, set a higher frequency HPF to restrict unwanted low frequency signals. This automatically changes the HPF filter from its normal 12 dB per octave Butterworth filter to a more appropriate filter, most commonly a 24 dB per octave Linkwitz-Riley filter.

   For subwoofers an adjustable LPF, 24 dB per octave, Linkwitz-Riley is enabled for their low-pass crossover filter.

2. Loudspeakers and Arrays with Subwoofers:

   To use full-range loudspeakers and arrays with subwoofers, set the X-Over LPF and HPF filters to the desired subwoofer to full-range crossover frequencies. This automatically changes the HPF filters from their normal settings to a more appropriate filter, most commonly a 24 dB per octave Linkwitz-Riley filter.

   While the crossover frequencies are adjustable, the type and slope of the crossover filters are not adjustable. The reason for this is that the level of the subwoofers is rarely matched to that of the full-range loudspeaker. For example, it is not uncommon at rock 'n roll shows for subwoofers to be operated at levels up to 12 dB higher than the full-range loudspeakers. The 24 dB Linkwitz-Riley filter provides a smooth summation and transition through the crossover region regardless of the level differences between the full-range and subwoofer sources. Other types of filters may cause notches or peaks through the crossover unless levels are precisely matched.

7.8 EQ (Input Channels A to D)

Use the EQ function to set the Input Channel equalization by selecting the A to D buttons. Each channel's EQ section has 10 filters. Each EQ section has the following variable parameters. The available parameters depend on the selected Type.

Parametric EQ	Sets the entire EQ section (filters 1 to 10) to In (active) or Out (inactive).
Type:	Scroll through and select the type for each filter: Bell, 6 dB LoShelf, 12 dB LoShelf, 6 dB HiShelf, 12 dB HiShelf, 6 dB HPF, 12 dB HPF, 6 dB LPF, or 12 dB LPF.
BW:	Scroll through and select the bandwidth for each filter: 0.02 to 10 octaves.
Freq:	Scroll through and select the frequency for each filter: Variable from 20 Hz to 20 kHz in 1/24th octave steps.
Gain:	Scroll through and select the gain for each filter: +/- 15 dB in 0.1 dB steps.
Filt:	Sets the selected filter (1 to 10) to In (active) or Out (inactive).

7.9 PROG

The UX8800 has memory spaces for 50 user-savable and loadable programs for each operating mode (Loudspeaker Processor and System Processor).

NOTE: The unit will only display programs stored in memory for the current operating mode: System Processor or Loudspeaker Processor.

Load	Scroll through existing programs stored in the processor memories to find and load the desired program. A program contains information for all processing parameters except for the mute settings. Programs can only be loaded for the specific operating mode in use.

NOTE: While mute settings are not saved, the mute preferences set in the On Prgm Load setting in the UTIL menu will be used when loading a program.

Save	Scroll through existing programs stored in the processor's memories and empty memories to find a destination to save the current processing parameters. Name the program to be saved. If a memory with an existing program is chosen, rename the program to be saved. This will replace the existing program saved into that memory.
Delete	Scroll through the existing programs stored in the processor's memories and choose one to delete. You must confirm deletion before the program can be deleted.

7.10 DELAY (Input Channels A to D)

Use the DELAY function to set Input Channel signal delay by selecting the A to D buttons. The input delay is normally used to set an overall delay for a loudspeaker or group of loudspeakers.

Select the signal delay up to approximately 1200 ms in one sample (20.83 µs) steps. The delay is displayed in both milliseconds (2 decimal places) and distance (feet or meters according to the units settings).

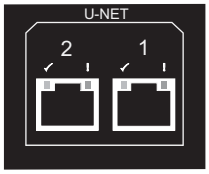
8 LED INDICATORS

8.1 Ethernet

The LEDs on the Ethernet connector indicate the Ethernet connection and activity status.

Left Link LED	Status	Right Activity LED	Status
Amber color	10 Mbps	Amber color	Half duplex
Green color	100 Mbps	Green color	Full duplex
On	Link established	On/flashing	Data activity
Off	No link	Off	No activity

8.2 U-Net Indicators

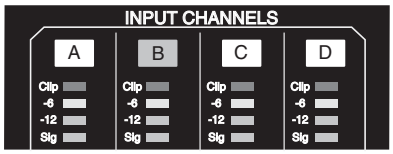


The U-Net LEDs on the front/rear panels indicate the U-Net network status.

Green LED (✓)	Red/Yellow LEDs (!)	Status
On	Off	U-Net network detected
On	Flashing	Local fault: not sending or receiving on the assigned U-Net channel(s) or local and received sample rates are not synchronized
On	On (2 seconds)	Local fault detected on another device on the network
Off	Off	No network detected

8.3 Input meters

The input meters indicate the signal level in dB below 0 dBFS (0 dB Full Scale), the clip level of the ADC (analog to digital converter). An input meter still functions when its Input Channel is muted. Ideally, the highest levels of the signal should illuminate the -6 LED segment, but not the CLIP segment. Occasional flashing of the CLIP segment may be sonically acceptable.



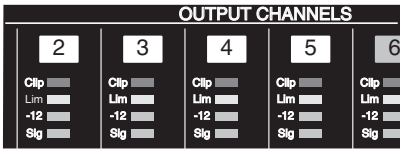
LED Segment	Signal Level
Clip Red	0 dBFS
- 6 Yellow	-6 dBFS
-12 Green	-12 dBFS
Sig Green	-40 dBFS

8.4 Output Meters

Unlike the input meters, the four LED segments of each output meter make up two different meters.

8.4.1 SIG, -12, AND CLIP SIG SEGMENTS

These three segments monitor the signal level in dB below 0 dBFS (0 dB Full Scale), the clip level of the DAC (digital to analog converter). An output meter still functions when its Output Channel is muted. Ideally, you want the highest level to illuminate the -12 segment, but not the CLIP segment. You can set levels lower than this, but understand that you are reducing the signal-to-noise ratio.



LED Segment	Signal Level
Clip Red	0 dBFS
-12 Green	-12 dBFS
Sig Green	-40 dBFS

8.4.2 LIM SEGMENT

This segment monitors the limiter status referenced to the level set for the limiter threshold. The Lim segment will indicate limiting even when its Output Channel is muted.

LED Segment	Status
Lim Yellow	On when the limiter threshold is exceeded and there is gain reduction

Occasional flashing is OK. However, if the LED is rapidly flashing yellow or is on steadily a large percentage of the time, the input signal to the loudspeaker may be exceeding the loudspeaker's capability and the volume level should be reduced.

9 EAWPILOT

9.1 Extra Capabilities

While the UX8800 interface window in EAWPilot software provides the same capabilities for controlling the UX8800 as its front panel controls, it also provides additional capabilities not available using the front panel controls.

9.1.1 LEVEL MONITORING - ANY MODE

The meters in EAWPilot provide more accurate and much higher resolution signal level monitoring. Both the average and peak levels are easier to read and provide mush better tracking for critical situations.

9.1.2 PARAMETER LINKING - EITHER MODE

Using the *Map* tab in the UX8800 interface window, parameter values for the input channels and the output channels may be linked so that any changes will affect all such linked parameters.

9.1.3 FIRMWARE UPDATE - EITHER MODE

Using the *Settings* tab in the UX8800 interface window, the firmware program for the UX8800 can be updated.

9.1.4 RESPONSE GRAPHS - SYSTEM PROCESSOR MODE

The Input Channel and Output Channel tabs provide a frequency response graph showing filter responses and gain for the selected channel. As well, the Xover tab provides the responses of the crossover filters.

9.1.5 RESPONSE GRAPHS - LOUDSPEAKER PROCESSOR MODE

The Input Channel tabs provide a frequency response graph showing user-adjustable filter responses and gain for the selected channel.

9.1.6 OUTPUT PROCESSING - LOUDSPEAKER PROCESSOR MODE

When an input channel is set for generic processing in this mode, the processing parameters for any output channels to which it is assigned can be adjusted using EAWPilot.

10 MAINTENANCE AND SERVICE

10.1 Maintenance

The only routine and periodic maintenance for the processor is physical cleaning and performance testing.

10.1.1 CLEANING

Clean the exterior surfaces of the chassis as required, using a soft, dry cloth to remove any dust or dirt. Remove any dirt from the air intake holes on the side and top of the chassis. Remove any dirt accumulated on the ventilation fan grille.

> ***CAUTION:*** To avoid damaging the exterior finishes or internal circuitry do not use any liquid, cleaning solvents, or abrasives.

While the interval between cleanings will depend on the frequency of usage and the conditions of use, it is recommended that cleaning be performed at least once a year. Clean more often if used in dusty or dirty conditions, such as part of a portable or touring system.

10.1.2 PERFORMANCE TESTING

Perform listening tests and/or formal measurements, checking all processor functions for proper operation.

While the interval between testing will depend on the frequency of usage and the conditions of use, it is recommended that should be performed at least once every six months. Test more often if used in conditions that subject the unit to mechanical stress, such as part of a portable or touring system.

10.2 Service

There are no user serviceable parts inside the UX8800 processor. In case of failure, refer all servicing to the factory. Service and repair information may be obtained by contacting the EAW Service Department or the EAW distributor for your country.

10.3 Return and Repair Issues

UX8800 repairs can be done either through an EAW distributor, EAW authorized service center, or by shipping the product to EAW Service. Prior to returning any product to EAW, an RA (Return Authorization) issued by EAW is required. Contact the EAW Service Department for details.

10.4 How To Contact EAW

We have tried to answer most questions you may have about the UX8800 in this manual. Should you need further assistance, please do not hesitate to contact us. You can contact EAW in several different ways:

General and Application Support Group

Eastern Acoustic Works	Tel	800 992 5013
One Main Street	Tel	+1 508 234 6158
Whitinsville, MA 01588 USA	Fax	+1 508 234 8251
	Fax	800 322 8251
Web Site	www.eaw.com	

Service

EAW Service Department	Tel	800 992 5013
Building #11	Tel	+1 508 234 6158
One Main Street	Fax	+1 508 234 3776
Whitinsville, MA 01588 USA		

e-mail

General information	info@eaw.com
Applications Support Group	asg@eaw.com
Service	service@eaw.com

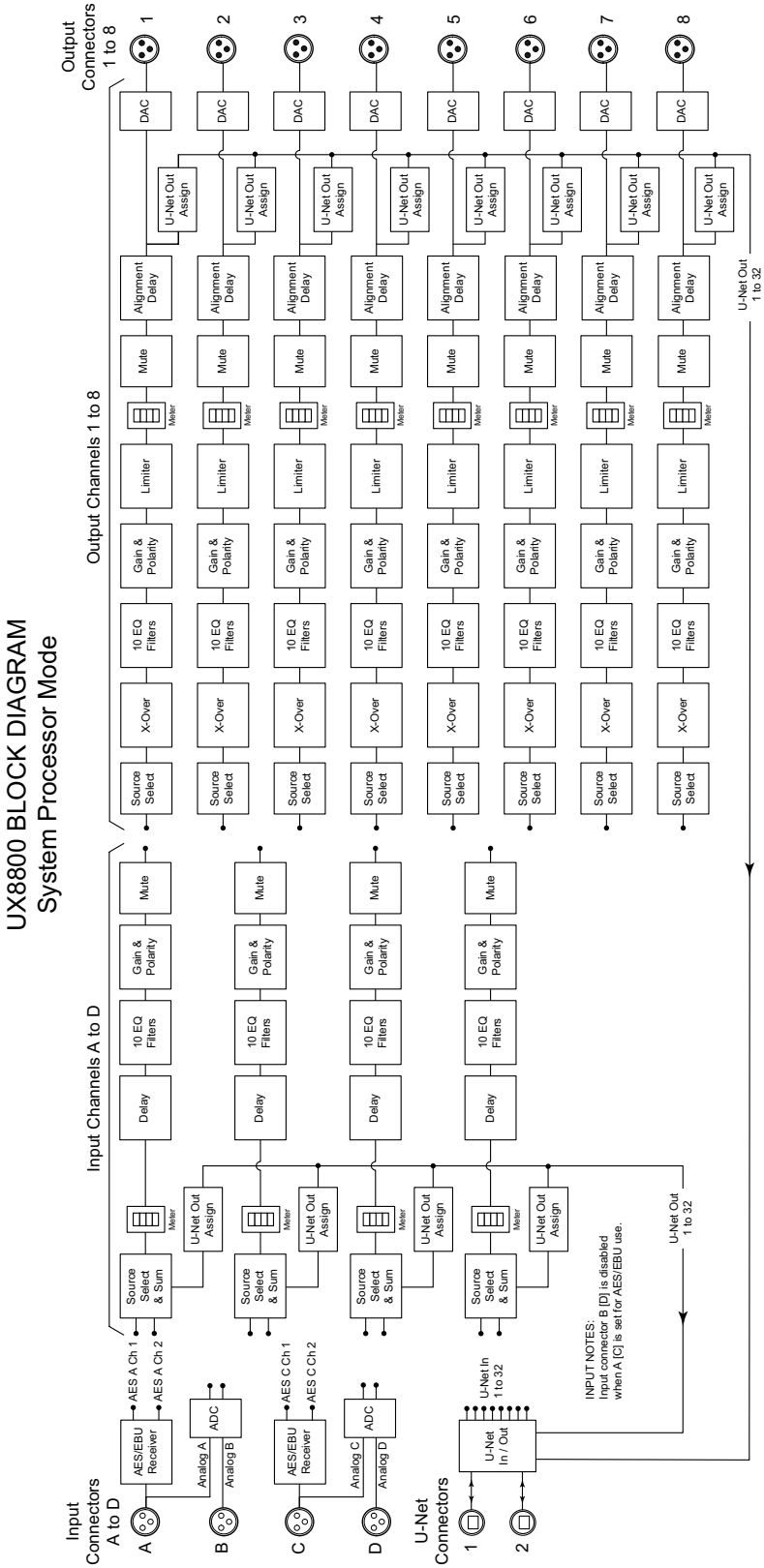
11 TROUBLESHOOTING

Troubleshooting a malfunctioning UX8800 consists primarily of determining if it is incorrect settings, faulty or incorrect connections, or an electronic failure requiring service. This table lists some possible trouble symptoms, causes, and corrective actions.

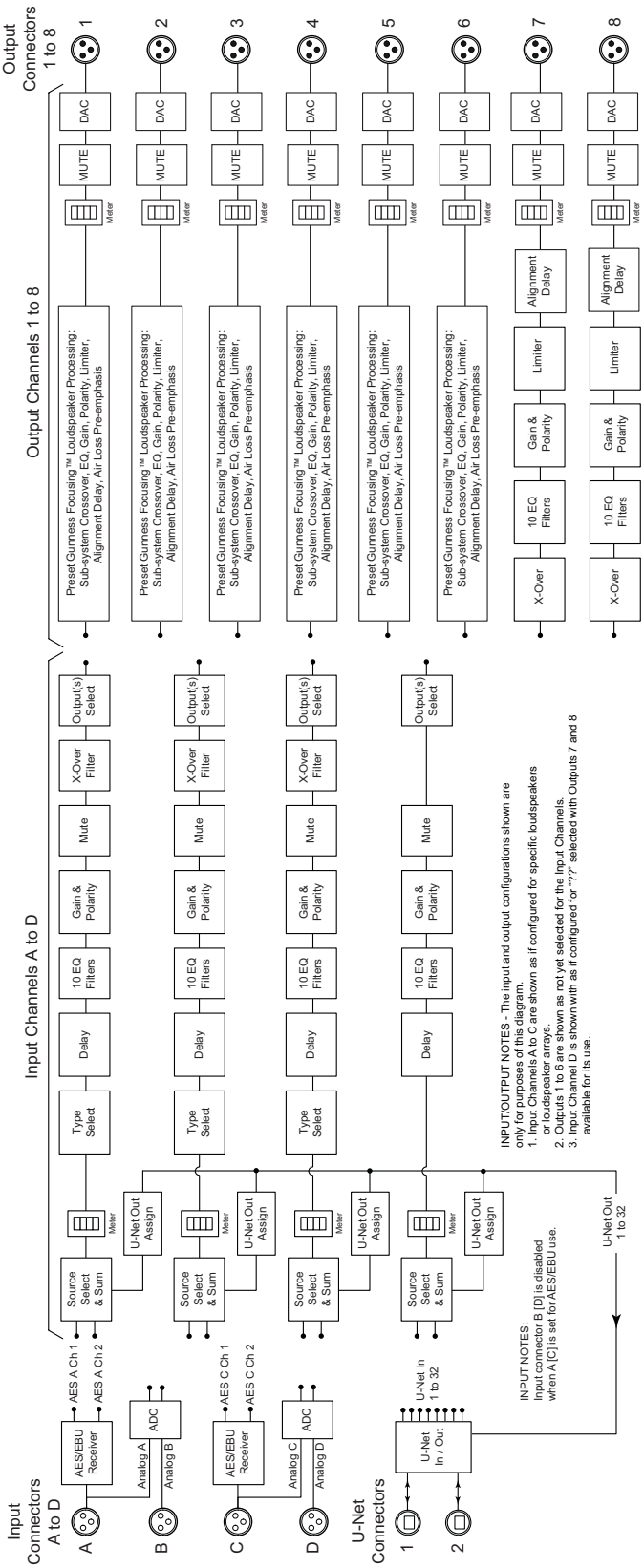
Symptom	Probable Cause	Corrective Action
No power light	Power cord disconnected	Ensure the power cord is properly connected at both ends and that the ac mains is working.
No power light	Rear panel power switch is off	Turn the power switch on.
No power light	Improper ac mains voltage	The UX8800 is deigned for an ac mains voltage between 100 V and 240 V, 50 Hz to 60 Hz. If outside these ranges, the UX8800 may fail to operate or become damaged.
No power light	ac mains fuse is blown due to an external cause	Disconnect the ac mains from the unit. Using a small screwdriver gently pry out the small drawer that is part of the rear panel ac mains connector.Check the fuse located on the right hand side. If the fuse is blown but glass remains essentially clear, this can indicate a faulty fuse or temporary external event, such as an excessive ac mains voltage spike. Replace the fuse with the supplied spare replacement fuse located on the left side of the drawer. If the fuse blows again, it indicates an internal failure and the UX8800 should be repaired by qualified service personnel. Replacement Fuse: 4 A, slow-blow, 5 mm x 20 mm, 250V IEC
No power light	ac mains fuse is blown due to an internal failure	Disconnect the ac mains from the unit. Using a small screwdriver gently pry out the small drawer that is part of the rear panel ac mains connector.Check the fuse located on the right hand side. If the fuse is blown and the glass is heavily blackened, this usually indicates an internal failure. Do not replace the fuse. The UX8800 should be repaired by qualified service personnel.
No input meter lights	Incorrect settings	Check to be sure that: 1. The correct input signal type has been selected in the UTIL menu for Inputs A&B and Inputs C&D. 2. Signal sources have been assigned in the CH menu for Channels A to D.
No input meter lights	No signal	Check to be sure there is signal from the source feeding the UX8800.
No input meter lights	Cables disconnected or faulty	Check the input cables to the UX8800 for faults or mis-wiring.
No input meter lights	Internal failure	Internal failure is possible. The UX8800 should be repaired by qualified service personnel.
No input and/or output meter lights	Incorrect settings	Check to be sure that all signal processing functions, especially gain controls, are correctly set for the intended application and that input and output channel source source assignments are correct.
No input and/or output meter lights	Internal failure	Internal failure is possible. The UX8800 should be repaired by qualified service personnel.
No output but meter lights work	Mutes are engaged	If the the output meters are functioning and there is no output, check to be sure that the output mutes are not activated. The meters function independently of the mute switch.
No output and no output meter lights on some or all channels	Incorrect configuration	Check that the output(s) is assigned an Input Channel Signal Source.
No output and no output meter lights on some or all channels	Incorrect settings	Check to be sure that all signal processing functions, especially gain controls, are correctly set for the intended application.
Strange malfunction(s), LCD display corrupt, or any of the above symptoms in this chart.	Digital lock-up	Power off, wait 10 seconds, then power on the processor to reset the digital electronics.
Panel is locked and forgot Pass Code	Alzheimers or equivalent	Reset the processor, contacting the factory for details on how to do this. WARNING: This process will reset ALL parameters to the factory default settings, erase all programs stored in Loudspeaker Processor memories, and erase the existing Pass Code.
Ethernet and/or U-Net connection does not work	Network connection faulty	Check the network LED indicators to determine the connection status. For indicator details, see Chapter 8. This may help to determine the corrective action needed.
Ethernet connection does not work	Incorrect cable	For direct connection to a computer, you must use the supplied Ethernet crossover cable or or an equivalent user-supplied cable. For a connection to an Ethernet hub, switch, or router, you must use a user-suppled, standard Ethernet cable.
Ethernet connection does not work	IP address is incorrect	For a direct connection to a computer, set the IP address in the UTIL menu to static. Manually assign the IP address by determining the computer's IP address, making the first three number groups the same as the computer's, and making the fourth number group unique to the UX8800.
Ethernet connection does not work	IP address is incorrect	For a connection to an Ethernet network, set the IP address in the UTIL menu to dynamic. Power off and then power on the UX8800. If a DHCP server is present, it should assign an IP address to the UX8800. If it fails to find an address, set the IP address to static and manually assign it an IP address, making the first three number groups the same as the other devices on the network and making the fourth number group unique to the UX8800.
U-Net connection does not work for EAWPilot control	Cable problem	Check that the cabling is a standard or crossover CAT-5 Ethernet cable and that the cable is functioning correctly. The U-Net ports auto-sense the cable configuration. The supplied Ethernet crossover cable can be used for interconnecting U-Net ports. Note: Control signals are automatically sent and received over U-Net connections.
U-Net connection does not work for audio	Audio signal(s) not assigned to the U-Net channels	Sending and receiving audio over U-Net requires assigning Input Channel and Output Channels to the desired U-Net channels. In other words, there must be signals assigned to be sent over a U-Net channel in order to receive signals on that U-Net channel. Use the CH U-Net Output function for the Input Channels and Output Channels to send signals to U-Net channels. Use the CH Src function for the Input Channels to receive U-Net signals from U-Net Channels.

12 BLOCK DIAGRAMS

12.1 System Processor Mode



12.2 Loudspeaker Processor Mode



APPENDIX

A Greybox Information

PURPOSE FOR GREYBOX FILES

In ***Loudspeaker Processor*** mode, the UX8800 allows loading files with factory-determined processing for specific loudspeaker models and arrays. This processing includes equalization, crossovers, high and/or low pass filtering, signal delay, and level control. In addition, files with Gunness Focusing also include proprietary processing invented by EAW specifically for correction of inherent loudspeaker anomalies.

Often, audio system designers, technicians, or end-users attempt to create loudspeaker processing from scratch using one of the several, excellent measurement systems publicly available. However, the systems and methods cannot duplicate what is involved for EAW engineers to create Greybox processor settings:

- Loudspeaker data far greater in quantity, types, precision, and accuracy (especially polar data).
- Use of proprietary analysis tools developed specifically for loudspeaker data.
- Use of proprietary Gunness Focusing algorithms for the processing.
- Extensive listening tests performed by a wider range of people over a much greater time period and under a much greater range of conditions.
- Controlled, laboratory conditions.
- Extensive knowledge in the application of loudspeaker data analysis and signal processing.

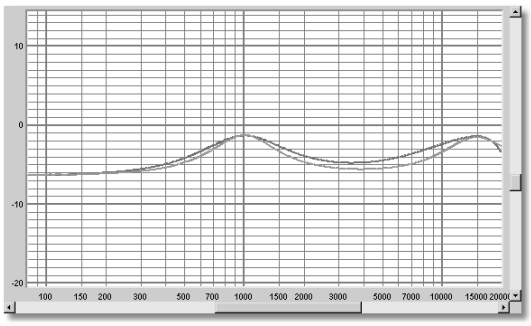
B System Processor Mode Processing

In ***System Processor*** mode, the UX8800 may appear similar to other digital signal processors. However, the processing algorithms used in the UX8800 differ from the normal, “textbook” algorithms used in digital processors. EAW developed new algorithms specifically tailored for digital audio processor hardware.

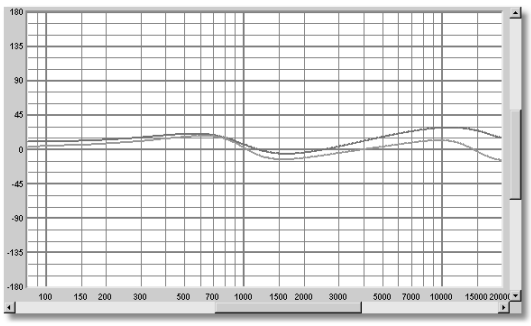
FILTER RESPONSE EXAMPLE

The accuracy and precision of the UX8800 filter responses can be compared to those using textbook algorithms. When applied to audio processing hardware, the latter do not provide textbook responses. The two graphs compare the results of EAW’s processing algorithms and standard “textbook” algorithms as used in well-accepted, digital signal processors. The frequency responses and phase response are for the UX8800 (lower curves) and a non-EAW processor (upper curves). The settings were two filters set for a 5 dB boost, 1 octave bandwidth (Q = 1), at frequencies of 1 kHz and 15 kHz. There are several things to note:

1. The upper curve is the upper curve becasuse its filter skirts extend somewhat beyond that of an ideal filter. In this case, the lower -3 dB point for the 1 kHz filter is actually over an octave below the filter frequency. The EAW response follows the response of an ideal filter.
2. The shapes of both the 1 kHz and 15 kHz filter frequency and phase responses are different for the non-EAW processor. In contrast, the frequency and phase response shapes of the two EAW filters are quite similar. When overlayed, they prove to be virtually identical.
3. Because of the difference in two non-EAW filter shapes, the response of the filters overlaps too much, resulting in an excessive boost in the 5 kHz to 10 kHz region.



Frequency Responses



Phase Responses

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